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# The Relationship Between Preoperative Kegel Exercises and the Incidence of Postoperative Urinary Incontinence

**Rinaldi Zainuddin**
Universitas Muhammadiyah Makasar
*e*-mail : rinaldi.zainuddin@gmail.com

**Abstract**
This research addresses a crucial research gap in the medical literature concerning the management of postoperative urinary incontinence. Although postoperative urinary incontinence is a common issue, research examining the relationship between preoperative Kegel exercise practices and the occurrence of postoperative urinary incontinence remains limited. Therefore, this study represents a significant step in filling this knowledge gap. This research offers several advantages (novelty). Firstly, it employs a literature review research method that combines findings from previous studies to gain a deeper understanding of the relationship between preoperative Kegel exercises and postoperative urinary incontinence. Secondly, the study aims to identify the impact of preoperative Kegel exercise practices as a preventive measure, which can help minimize postoperative complications that affect patients' quality of life. The results of this research provide a strong foundation for the development of improved clinical guidelines for preoperative preparation. This can assist in reducing the incidence of postoperative urinary incontinence and enhancing the care of patients undergoing specific surgeries. Additionally, emphasizing preoperative Kegel exercises as part of the preoperative preparation can lead to more effective clinical practices in managing postoperative urinary incontinence issues. Thus, this research offers new and relevant insights into addressing this condition.
**Keywords:** Incontinence, Exercise, Kegel, Preoperative, Preventive.

## INTRODUCTION

Urinary incontinence is a prevalent health issue affecting millions of people worldwide (Ningsih, Erika and Woferst, 2021). This term refers to an individual's inability to control the normal release of urine from the bladder, which can lead to unwanted urine leakage. Urinary incontinence can be highly disruptive, impacting the quality of life and often causing emotional stress for those experiencing it. One of the primary risk factors for urinary incontinence is specific surgeries, particularly in women who have given birth or in men undergoing pelvic surgeries like prostate procedures (Hasanah *et al.*, 2015). In recent decades, efforts have been made to understand the causes and address the issue of postoperative urinary incontinence. One approach that has garnered attention is Kegel exercises, a series of exercises designed to strengthen the pelvic floor muscles responsible for regulating urine flow. Kegel exercises were first introduced by Dr. Arnold Kegel in the 1940s as a non-

surgical method to address urinary incontinence in women following childbirth. These exercises aim to enhance the strength of the muscles surrounding the urethra and bladder, thereby enabling individuals to have better control over the bladder emptying process (Panayi *et al.*, 2009).

Although Kegel exercises have become a part of post-childbirth urinary incontinence therapy, questions regarding their effectiveness in reducing the risk of postoperative urinary incontinence remain a relevant research topic. Research exploring the relationship between preoperative Kegel exercise practices and the occurrence of postoperative urinary incontinence is limited and exhibits significant variability in results (Dorey, 2013). Therefore, this study aims to investigate whether preoperative Kegel exercises have a significant association with the reduction of postoperative urinary incontinence incidents. This research possesses several significant advantages and novelties in the context of postoperative urinary incontinence management (Rehder and Gozzi, 2007). Firstly, the study employs a literature review method that integrates findings from previous research to generate a deeper understanding of the relationship between preoperative Kegel exercises and postoperative urinary incontinence. This method enables us to synthesize various existing scientific evidence and construct a comprehensive understanding of the issue. Secondly, the study attempts to identify the impact of preoperative Kegel exercise practices as a preventive measure, which can help minimize postoperative complications affecting the patients' quality of life. This is a crucial step in the effort to enhance patient care for those undergoing specific surgeries, especially those at high risk of developing postoperative urinary incontinence.

The results of this research are expected to provide a robust foundation for developing improved clinical guidelines in preoperative preparation (Elsaqa *et al.*, 2023). This can assist in reducing the incidence of postoperative urinary incontinence and enhancing patient care. Additionally, the emphasis on preoperative Kegel exercises as part of preoperative preparation can lead to more effective clinical practices in managing postoperative urinary incontinence issues. Thus, this research offers new and relevant insights into addressing this condition. It is essential to understand that managing postoperative urinary incontinence is a complex and multidisciplinary challenge (Nahon, Martin and Adams, 2014). Therefore, this research is expected to make a valuable contribution to our understanding of factors that can influence the risk of postoperative urinary incontinence, as well as effective intervention strategies to address this issue. This research can also serve as a foundation for further studies in this field, helping improve the care and quality of life for patients affected by postoperative urinary incontinence. Based on the findings of the educational research, the level of education can influence an individual's knowledge and perception of conditions such as urinary incontinence (Khorrami *et al.*, 2023).

Furthermore, WHO considers this age group to be at a higher risk for pregnancy and childbirth. Additionally, occupation can also affect the likelihood of urinary incontinence, especially among homemakers who tend to engage in physically demanding activities such as cooking and cleaning. Age and pregnancy can also contribute to urinary incontinence due to the weakening of pelvic floor muscles that occurs with age and during the postpartum period. This research indicates that Kegel exercises have a positive impact on reducing the levels of urinary incontinence among postpartum mothers. Kegel exercises can strengthen the pelvic floor muscles and urinary tract, thereby assisting in the prevention of urinary incontinence. There is a significant difference observed between the group that underwent Kegel exercises and the control group in terms of reducing urinary incontinence levels (Anglim *et al.*, 2018). This study supports previous research findings that highlight the positive effects of Kegel exercises in reducing urinary incontinence. The results of this research also suggest that postpartum mothers should consider adopting a regular Kegel exercise routine to reduce the risk of urinary incontinence and other health issues during the postpartum period.

## RESEARCH METHOD

This research employs the method of library research or literature review to delve into relevant literature and comprehend the relationship between preoperative Kegel exercises and postoperative urinary incontinence. This method involves searching for and analyzing existing scientific literature, such as journal articles, books, theses, and research reports related to the research topic. The literature review process is conducted through academic databases, digital libraries, and reputable medical information sources. The first step in this method is to formulate clear and specific research questions about the relationship between preoperative Kegel exercises and postoperative urinary incontinence. Once relevant literature is identified, these articles are analyzed to identify previous findings, research methods employed, and research outcomes related to the relationship between Kegel exercises and postoperative urinary incontinence. This literature review method aids in gathering existing scientific evidence, integrating it, and constructing a more comprehensive understanding of the research topic. The results of this literature analysis will serve as the foundation for building the research argument and identifying research gaps that require further investigation. Therefore, this library research method will provide a strong basis for the development of further research on the relationship between preoperative Kegel exercises and postoperative urinary incontinence.

## RESULT AND DISCUSSION

Research on the relationship between preoperative Kegel exercises and the occurrence of postoperative urinary incontinence reflects the significance of Kegel exercises as a preventive and rehabilitative method in addressing urinary

incontinence issues following specific surgeries (Levy *et al.*, 2021). Kegel exercises, initially introduced by Dr. Arnold Kegel in the 1940s, constitute a series of exercises aimed at strengthening and training the pelvic floor muscles, also known as the levator ani muscles. These muscles are located around the lower pelvis and support vital organs such as the bladder, rectum, and uterus in women. The importance of Kegel exercises as a preventive measure is primarily related to their role in maintaining and enhancing control over the pelvic floor muscles. These pelvic floor muscles play a pivotal role in controlling urine flow and preventing unwanted urine leakage. When these muscles are weak or not functioning properly, individuals may experience urinary incontinence, which can involve occurrences such as urine leakage when coughing, laughing, or exercising (Dubbelman *et al.*, 2012).

Specifically in the preoperative context, Kegel exercises are essential because certain surgeries, especially those involving pelvic organs such as prostate surgery in men or gynecological surgery in women, can exert additional pressure on the pelvic floor muscles (Noel-Ford, 2020). This can result in a reduction in the strength and control of these muscles, subsequently increasing the risk of postoperative urinary incontinence. By regularly performing Kegel exercises before surgery, patients can strengthen their pelvic floor muscles and maintain better control over urine flow. This can serve as an effective preventive measure in reducing the risk of postoperative urinary incontinence (Newman, Borello-France and Sung, 2018). Therefore, it is important for individuals undergoing pelvic surgery to understand the benefits of Kegel exercises as part of their preoperative preparation, enabling them to take necessary steps to maintain pelvic health and reduce postoperative complications related to urinary incontinence.

The impact of surgery on pelvic floor muscles involves changes that occur in the group of muscles located around the lower pelvis due to specific surgical procedures (Abdulkareem, Abdul-Malek and Hermiz, 2021). These pelvic floor muscles, also known as the levator ani muscles, have a crucial role in maintaining bladder control and regulating urine flow within the body. Certain surgeries, particularly those related to pelvic organs such as prostate surgery in men or gynecological surgery in women, can have significant effects on these pelvic floor muscles. The influence of surgery on pelvic floor muscles may encompass various aspects that could potentially disrupt normal bladder function (O'Boyle *et al.*, 2016). Firstly, surgery can lead to a decrease in the strength of pelvic floor muscles. During the surgical procedure, these muscles can experience pressure, stretching, or even trauma, which can result in a reduced ability to contract these muscles. This is a specific concern, especially in pelvic surgeries such as prostate surgery in men or gynecological surgery in women, which often involve manipulation of pelvic organs. Additionally, surgery has the potential to damage the nerves controlling the pelvic floor

muscles. Damage to these nerves can disrupt the signals sent from the brain to the pelvic floor muscles, which are necessary to regulate urine flow (Sharma *et al.*, 2021). This can cause disturbances in the body's ability to control the bladder effectively. Some types of surgery involve structural changes to pelvic organs. This can include the removal of specific organs or the relocation of organs within the pelvis. Such structural changes can lead to a shift in the position of pelvic floor muscles and disrupt their normal function in controlling urine flow. The impact of the surgical procedure on pelvic floor muscles is highly relevant to the issue of postoperative urinary incontinence (Demirkesen *et al.*, 2007). Urinary incontinence is a common medical problem that occurs after certain surgeries, especially in women who have given birth or individuals who have undergone pelvic surgery. Therefore, it is important for individuals undergoing pelvic surgery to understand this risk and consider appropriate preventive measures. Preoperative Kegel exercises are one such effective preventive method. By strengthening pelvic floor muscles before and after surgery, individuals can enhance their bladder control, reduce the risk of urine leakage, and expedite postoperative recovery.

Practicing Kegel exercises before surgery is a crucial preparation. Kegel exercises consist of a series of exercises specifically designed to strengthen the pelvic floor muscles, particularly the levator ani muscles. Through these exercises, one can develop the strength and awareness of these muscles, which, in turn, offer several highly relevant benefits in the context of surgery (Lor *et al.*, 2020). Kegel exercises play a critical role in improving an individual's control over their bladder, reducing the risk of postoperative urinary incontinence, and expediting postoperative recovery. Firstly, Kegel exercises help improve an individual's ability to control the bladder by strengthening the pelvic floor muscles. With stronger muscles, individuals can better withhold urine and avoid unwanted leakage. Secondly, Kegel exercises act as an effective preventive measure against postoperative urinary incontinence. The risk of losing bladder control after surgery can significantly decrease with regular preoperative Kegel exercises. Strong pelvic floor muscles help maintain control during the postoperative healing process, which is a vital concern, especially in pelvic surgeries. Furthermore, Kegel exercises can accelerate the postoperative recovery process.

This is achieved by improving blood circulation to the pelvic area and expediting muscle recovery (Karimah, 2022). As a result, postoperative discomfort can be reduced, and the recovery process can be expedited. Lastly, Kegel exercises enhance the quality of life for patients undergoing surgery. With better control over the bladder and a lower risk of incontinence, individuals can carry out their daily activities more comfortably and confidently, even after undergoing complex surgery. It is important to note that Kegel exercises should be performed under the guidance of medical

professionals, especially if individuals are unfamiliar with these exercises. Consultation with a doctor or physiotherapist will help determine appropriate Kegel exercises and ensure that they are performed correctly. By incorporating Kegel exercises as part of preoperative preparation and postoperative rehabilitation programs, individuals can enhance their chances of successful recovery, reduce the risk of postoperative complications, and maintain optimal quality of life.

Postoperative urinary incontinence is a common issue, especially in women who have given birth or individuals who have undergone pelvic surgery such as prostate surgery in men. These surgeries can affect the pelvic floor muscles and the nerves that control them, which, in turn, can disrupt bladder control and lead to urine leakage. Faced with this risk, Kegel exercises play a vital role as both a preventive and rehabilitative measure. Before surgery, Kegel exercises can prepare the pelvic floor muscles by strengthening them, improving bladder control, and helping to prevent potential postoperative urine leakage. After surgery, Kegel exercises remain highly relevant as part of the rehabilitation program. Pelvic surgeries often require a substantial recovery period, and the pelvic floor muscles may weaken during this time. Kegel exercises help restore the strength of pelvic floor muscles, improve bladder control, and reduce the risk of postoperative urinary incontinence. Thus, Kegel exercises are a valuable tool in addressing the issue of postoperative urinary incontinence. This not only affects the quality of life of patients who have undergone surgery but also helps prevent complications that can arise from postoperative urine leakage. Therefore, it is important for individuals undergoing pelvic surgery to consider Kegel exercises as an essential part of their preparation and recovery.

**Implementation of Better Clinical Practices**

Research findings confirming the positive relationship between preoperative Kegel exercises and the reduction in postoperative urinary incontinence have significant implications in the development of improved clinical practice guidelines. These findings provide a strong foundation for healthcare professionals to provide more targeted recommendations to patients undergoing specific surgeries. These updated practice guidelines will integrate the importance of Kegel exercises in preoperative preparation and postoperative recovery as an integral part of comprehensive care. Furthermore, the research highlights that Kegel exercises are not only a focus of treatment but also a crucial preventive measure in managing this issue, especially for individuals undergoing surgeries that can affect their bladder function. Thus, preoperative Kegel exercises should not only be a focus in treatment but also in prevention efforts. Patients receiving appropriate information and guidance on Kegel exercises as preoperative preparation can reduce the risk of postoperative urinary incontinence, improve their quality of life, and reduce the medical burden associated with postoperative care. Overall, this research provides a

deeper understanding of the critical role of Kegel exercises in addressing postoperative urinary incontinence. It underscores the importance of a holistic approach in patient care, including thorough preoperative preparation to minimize postoperative complications. By integrating Kegel exercises as a preventive measure, clinical practices can be more effective in enhancing health outcomes for individuals undergoing surgeries that can affect their bladder function.

## CONCLUSION

This study investigated the relationship between preoperative Kegel exercise practices and the occurrence of postoperative urinary incontinence. The research findings indicate that there is a positive relationship between preoperative Kegel exercises and the reduction in postoperative urinary incontinence. Patients who regularly engage in Kegel exercises before surgery tend to have a lower risk of experiencing urine leakage after the operation. These results have significant implications in the development of improved clinical practice guidelines. Updated practice recommendations can provide clearer guidance to patients undergoing specific surgeries about the importance of Kegel exercises in preoperative preparation and postoperative recovery. Kegel exercises are not only a part of urinary incontinence therapy but also a crucial preventive measure in addressing this issue, especially for individuals undergoing surgeries that can affect their bladder function. Beyond clinical benefits, this research also fills an important knowledge gap in the medical literature. While postoperative urinary incontinence is a common issue, research examining its relationship with preoperative Kegel exercises is still limited. Therefore, this study makes a valuable contribution to our understanding of how proper preoperative preparation can help reduce the risk of postoperative complications. Overall, preoperative Kegel exercises are a vital measure in managing postoperative urinary incontinence and improving patient clinical outcomes. It is crucial to integrate Kegel exercises as a preventive step in clinical practice to provide greater benefits to individuals undergoing surgeries that can impact their bladder function.

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